REVISED CLAIMS

What is claimed is:

1. A reflectometer made up of first and second subsections (4a, 4b) having different optical reflecting properties, which extend at least in a first direction (x) on a silicon substrate (2),
wherein the less reflecting first subsections (4a) include a plurality of deeply etched oblique surfaces (5.1a, 5.1b), which are positioned such that no retroreflection of the light beams incident thereto results.

2. The reflectometer as recited in Claim 1,
wherein the oblique surfaces (5.1a, 5.1b) are composed of a plurality of adjacent V-grooves (5.1 - 5.10), which are disposed in a second direction which is oriented normally to the first direction.

3. The reflectometer as recited in Claim 2,
wherein the V-grooves (5.1 - 5.10) are regularly spaced in the first subsections (4.a).

4. The reflectometer as recited in Claim 2,
wherein the oblique surfaces (5.1a, 5.1b) of a V-groove (5.1 - 5.10) are each oriented at an angle of (α) of approximately 72° to one another.

5. The reflectometer as recited in Claim 1,
wherein, as silicon substrate material (2),
monocrystalline (100) silicon is used, and the first direction (x) corresponds to the (011) direction of the monocrystalline (100) silicon.

6. The reflectometer as recited in Claim 1,
wherein, the width (b) of the first subsections (4.a) and

the width (b) of the second subsections (4b) are selected to be identical in the first direction (x).

7. The reflectometer as recited in Claim 2, wherein, disposed at the edges of the first non-reflecting sections (4a) is likewise at least one V-groove (6.1 - 6.4), which extends in the second direction (y) nearly over the entire length (l) of the first subsections (4a).

8. The reflectometer as recited in Claim 1, wherein a coating of highly reflective material is applied to the second, more heavily reflecting subsections (4b).

9. The reflectometer as recited in Claim 1, wherein the oblique surfaces are formed as pyramid-shaped depressions.

10. The reflectometer as recited in Claim 1, wherein the oblique surfaces are positioned such that, for light beams (L) from a specific direction of incidence (IN), following repeated reflection at the oblique surfaces (5.1a, 5.1b), a reflection direction (OUT) results, which does not coincide with the direction of incidence (IN).

11. A method for manufacturing a reflectometer made up of first and second subsections (4a, 4b) having different optical reflecting properties, which extend at least in a first direction (x) on a silicon substrate (2), wherein, in the less reflecting first subsections (4a), a plurality of oblique surfaces (5.1a, 5.1b) is produced by deep etching, which are positioned such that no retroreflection of the light beams incident thereto results.

12. The method as recited in Claim 11,
wherein, normally to the first direction (x), a plurality of V-grooves (5.1 - 5.10) is formed in a second direction (y).

13. The method as recited in Claim 12,
wherein, to form the V-grooves (5.1 - 5.10), oblique surfaces (5.1a, 5.1b) are selectively etched into the surface of the silicon substrate (2), in the region of the first subsections (4a).

14. The method as recited in Claim 13,
wherein, prior to the etching of the oblique surfaces (5.1a, 5.1b), at least the second subsections (4b) are covered with an etching mask (10) on the silicon surface.

15. The method as recited in Claim 14,
wherein chromium is used as a material for the etching mask (10).

16. The method as recited in Claim 13,
wherein potassium hydroxide is used in combination with isopropanol as an etching solution.

17. The method as recited in Claim 13,
wherein the etching process continues until each of the V-grooves is completely formed.

18. The method as recited in Claim 14,
wherein, after completion of the etching process, the etching mask is removed again.

19. The method as recited in Claim 11,
wherein a plurality of pyramid-shaped depressions is etched into the silicon substrate in the first subsections.